NORTH AMERICAN NEWSPRINT INDUSTRY: TRANSITIONS TO RECYCLING

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I. INTRODUCTION

Background

The Northeast Recycling Council (NERC), an affiliate of the Council of State Governments' Eastern Regional Conference (CSG/ERC), is comprised of state recycling and solid waste directors, and representatives from both houses of the state legislatures from Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont. To coordinate initiatives among its member states and assist the public and private sectors, NERC has undertaken a number of projects aimed at developing regionally consistent and compatible policies and programs regarding recycling and market development.

In 1989 the Council brought together state recycling officials, representatives of the newsprint industry and newspaper publishers to spur investment in the facilities needed to make the recycling of millions of tons of old newspapers generated in the region an economic and technical reality. Through a combination of voluntary agreements and legislative mandates initiated by individual states and coordinated by NERC, a significant majority of newsprint publishers in the Northeast are expected to increase purchases of recycled fiber from current levels of approximately ten percent to 40-50 percent by the year 2000. Substantial investment has been made by the newsprint industry to accommodate this new demand, resulting in significant growth in projected demand for old newspapers (ONP) and old magazines (OMG) generated in the Northeast.

Scope of Report

A report completed by the staff of the Northeast Recycling Council in January 1992 examined the current and projected demand for ONP and OMG by the Eastern North American newsprint industry.[1] In this report, those demand estimates are updated to reflect planned recycling capacity expansions that have come on line, newly announced projects and others that have been canceled. Also in this report, a preliminary assessment of the extent to which Northeast publishers are meeting the expectations of NERC states under the voluntary agreements and legislative mandates is undertaken. In addition, the availability of recycled newsprint to meet the publishers' purchasing goals is estimated. And finally, current trends in the North American newsprint industry are more thoroughly analyzed.

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[1]This report, entitled *Current and Project Demand For Old Newspapers and Old Magazines By Eastern North American Newsprint Industry*, January 1992, is available through NERC.

II. UPDATE OF *CURRENT AND PROJECTED DEMAND FOR ONP AND OMG BY EASTERN NORTH AMERICAN NEWSPRINT INDUSTRY*

Purpose

The purpose of this update is, first, to measure the progress that has been made in expanding the North American newsprint industry's demand for old newspapers and old magazines since the agreements with publishers were reached. Second, the data presented in here will provide NERC membership with important information on the timing of industry capacity expansions as this has important implications for existing and planned ONP and OMG collection and marketing efforts by localities and states.

Defining the Region

To assess the current and future demand for ONP and OMG generated in the Northeast, recycled newsprint mills have been selected for study that could potentially consume wastepaper generated and/or influence wastepaper markets in the Northeast. For purposes of this analysis, mills situated in a region defined as Eastern North America are considered. The region comprises the Eastern Canadian provinces of Quebec, Ontario, Newfoundland, New Brunswick and Nova Scotia, the Northeast and South Atlantic regions of the U.S., plus the state of Tennessee, and the East North Central division of the Midwest (Wisconsin, Michigan, Illinois, Indiana and Ohio).[2]

Deinking Capacity

Deinking is the process of removing inks and other contaminants from wastepaper. Deinking capacity is a measure of the newsprint industry's ability to produce pulp from wastepaper fibers for use in paper manufacturing. Currently, the deinking capacity of newsprint producers in the region is about 2.05 million tons. This represents a growth in capacity of nearly 600 percent from 1988 (Figure I).

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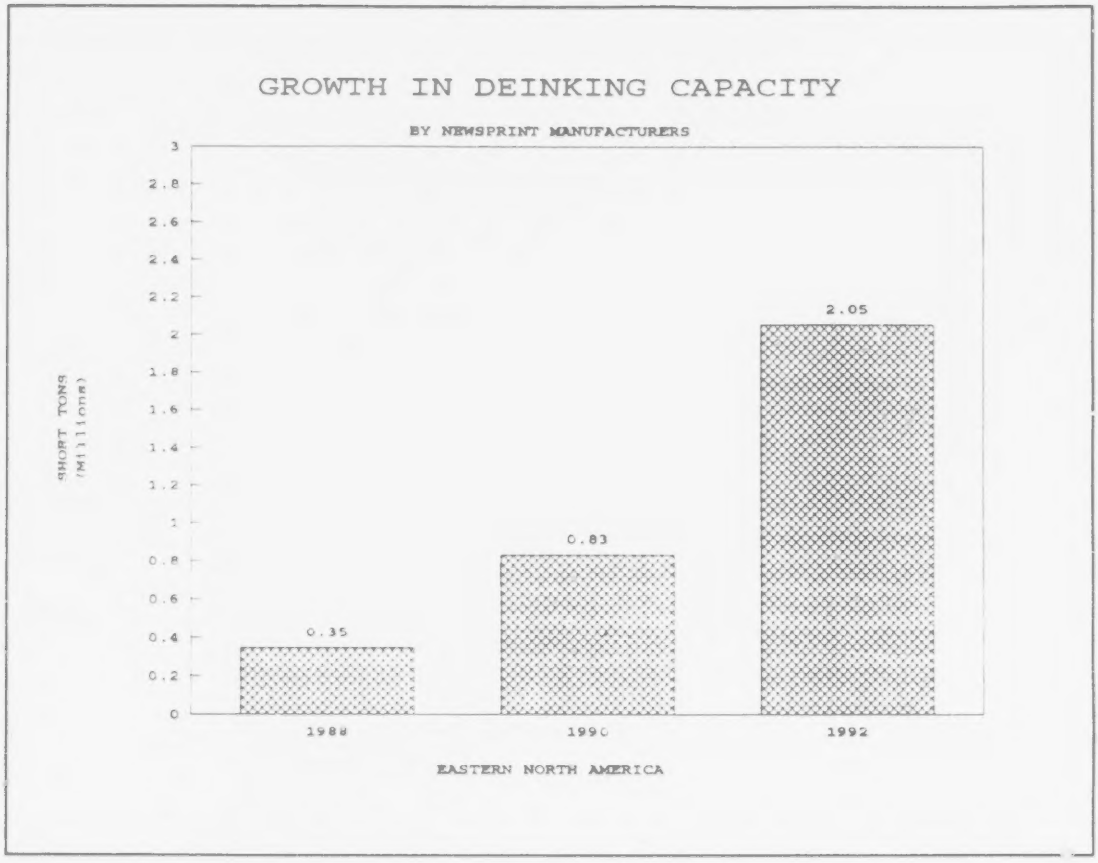
[2]Note: The region of study has been expanded since the last report to include the East North Central division of the Midwest (all U.S. regions are given as defined by the U.S. Census Bureau).

FIGURE I.



Source: NERC

Factors Affecting Wastepaper Demand

When wastepaper is deinked and converted to pulp, some fibers are lost in the process. For this reason, the demand for wastepaper will actually exceed deinking capacity when all the capacity is fully utilized. As a general industry rule, ONP and OMG consumption at recycled newsprint mills will be at least 20 percent higher than the production of deinked pulp. Thus for every ton of deinked pulp produced, approximately 1.2 tons of wastepaper furnish will be required.

In addition, recent advances in deinking technology have enabled many recycled newsprint mills to consume both ONP and OMG. Most modern deinking lines producing pulp for newsprint production now require a wastepaper furnish of 70 percent ONP and 30 percent OMG.

Based on these factors, estimating demand for ONP and OMG becomes a simple matter of making adjustments to deinking capacity to reflect the loss of fibers during the deinking process, and the relative mix of ONP and OMG that is required. It should be noted, however, that this method assumes that all the deinking capacity is fully utilized - that is, operating at 100 percent capacity. Actual demand will vary by mill, depending upon the operating rate of its deinking capacity.

Project Update

Since the previous report, two new deinking facilities have come on line in Canada:

- Kruger's 55,000 ton per year (tpy) deinking line at its Bromptonville, Quebec mill, has the ability to consume 46,000 tpy of ONP and 20,000 tpy of OMG; and

- Daishowa's 121,000 tpy deinking line at its Quebec City, Quebec mill. The facility has the capacity to consume 73,000 tpy of ONP and 15,000 tons OMG (40 percent of the mill's wastepaper furnish will be old telephone directories, giving the mill the ability to consume 48,000 tpy of old directories).

While Kruger and Daishowa have started their operations as predicted, two U.S. deinking projects have been put on hold indefinitely. Jefferson Smurfit recently announced that its plans to build a 275,000 tpy recycled newsprint mill in New York State have been shelved due, in part, to the weak newsprint market. Caithness King has been unable to move forward with its plans to build a market pulp deinking facilities in Pejepscot, Maine. Combined, these projects would have added 456,000 tpy of ONP and 226,000 tpy of OMG demand to the region.

Still on schedule are the following:

For planned start-up in 1992:

- Donahue Inc., James Maclaren, Inc. and Cascade Inc.'s 100,000 tpy deinking plant at Cap-de-la-Madeleine, Quebec. The market pulp plant will consume 84,000 tpy of ONP and 36,000 tpy of OMG to be used by Maclaren and Donahue to produce recycled newsprint at their existing mill sites and elsewhere in Eastern Canada; and

- Bear Island Inc.'s 48,000 tpy deinking line at Ashland, Virginia, giving the mill the ability to use 40,000 tpy of ONP and 17,000 tpy of OMG.

For planned start-up in 1993:

- Bowater Inc.'s 100,000 tpy deinking plant at its East Millinocket, Maine newsprint mill. Wastepaper consumption will be about 84,000 tpy of ONP and 36,000 tpy of OMG; and

- Stone Consolidated's 77,000 tpy deinking line in Shawinigan, Quebec. Wastepaper consumption at the plant will be about 65,000 tpy of ONP and 28,000 tpy of OMG.

For proposed start-up in 1994 and 1995:

- Ponderosa Fibres Inc.'s proposed new mill and deinking plant in Albany, New York with an estimated annual waste paper consumption of 129,000 tpy for ONP and 52,000 tpy for OMG;

- Ponderosa Fibres Inc.'s proposed new mill and deinking plant in Bronx, New York with an estimated annual waste paper consumption of 120,000 tpy for ONP and 51,000 tpy for OMG; and

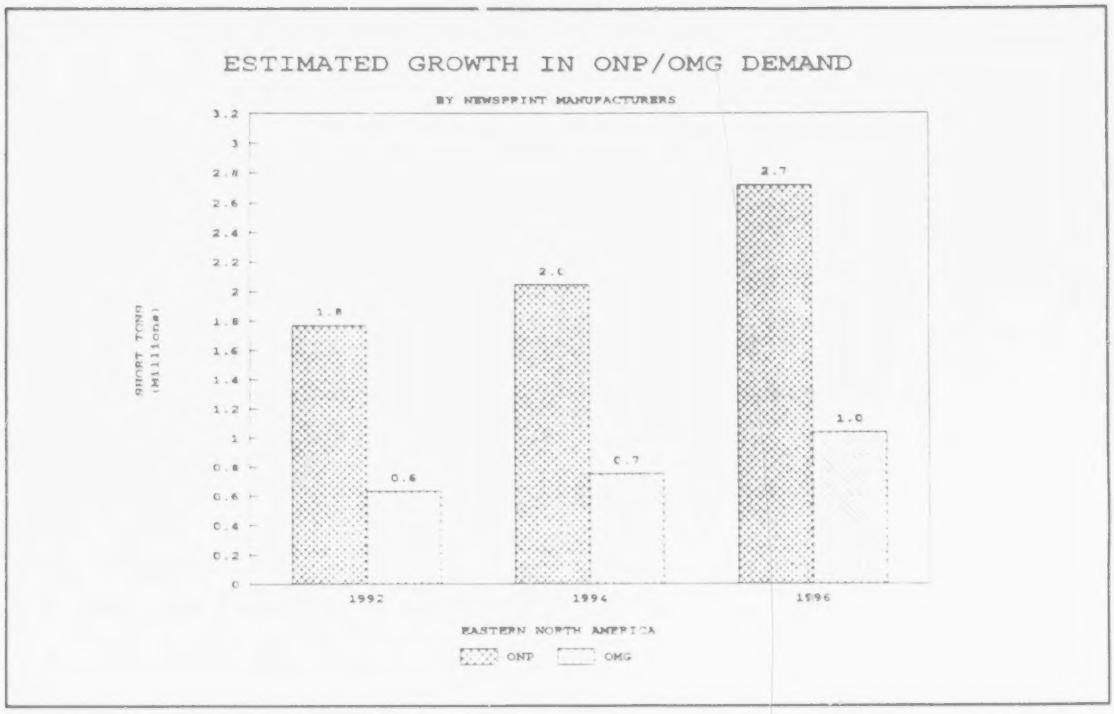
- Bowater Inc.'s proposed second phase of its deinking project will add 129,000 tpy of ONP consumption capacity and 55,000 tpy for OMG.

In addition to these planned facilities, Quebec and Ontario Papers recently announced that it was considering adding a deinking system at its Baie Comeau, Quebec newsprint mill. If the project goes forth as reported, the deinking plant would consume about 294,000 tpy of ONP and 126,000 tpy of OMG.

Revised Demand Estimates

When demand projections from the previous report are adjusted to account for Quebec and Ontario's new proposal and the project cancellations by Jefferson Smurfit and Caithness King, there is a total net loss of demand potential of 230,000 tpy for ONP and 100,000 tpy of OMG. Still, if all of the remaining planned and proposed facilities come on line, the current demand for ONP and OMG by newsprint manufacturers will continue to increase, reaching 2.7 and 1 million tons respectively by 1996 (Figure II). These seven new deinking facilities would bring the total number operating in the region to twenty by 1996. (See Table I. in Appendix A for mill by mill wastepaper demand estimates)

FIGURE II.



Source: Deinking capacity information compiled by the Northeast Recycling Council from a variety of published sources.

III. ASSESSMENT OF PUBLISHERS' ABILITY TO MEET RECYCLED CONTENT PURCHASING GOALS

Purpose

The purpose of this analysis is to gauge the ability of Northeast publishers to meet their recycled content newsprint purchasing goals. The assessment will provide the first estimate of the extent to which publishers are exercising a preference for recycled content newsprint in their purchasing practices. It will also examine the long-term ability of publishers to meet the goals based on the projected availability of recycled content newsprint in Eastern North America.

Background

Six NERC member states have entered into voluntary agreements with their newspaper publishers to increase the purchases of recycled newsprint. Two states, Connecticut and Rhode Island, have passed legislation mandating that publishers increase purchases. Table I. outlines the purchasing goals of these agreement and laws for the years 1992 through 2000.

TABLE I.
NEWSPAPER PUBLISHERS' RECYCLED NEWSPRINT PURCHASING GOALS
- NORTHEAST STATES -
(in percent)

	YEAR								
STATE	'92	'93	'94	'95	'96	'97	'98	'99	'2000
CT*	11	16	20	23	31	40	45	50	-
ME[3]	-	10	-	16	-	31	-	-	40
NH	-	11	-	23	-	31	-	-	40
NY	11	-	-	23	-	31	-	-	40
RI*	11	-	-	22	-	31	-	-	40
VT	11	-	-	23	-	31	-	-	40
MA	12	-	-	25	-	35	-	-	50
PA	-	-	-	50	-	-	-	-	90

Source: NERC
Note: Shaded area represents goals that are measured in terms of recycled newsprint purchases. Non-shaded areas represent goals measured in terms of recycled fiber purchases.
* Have laws requiring publishers to meet the goals.

[3]The Maine goals of 25 and 40 percent recycled content are converted to fiber consumption goals.

Connecticut, New Hampshire, New York, Rhode Island and Vermont have all adopted the same methods for measuring the purchasing goals. Under this approach, the goals are expressed in terms of recycled fiber purchases as a percentage of total fiber purchases. Maine established its goals in terms of percentage purchases of recycled newsprint, but only suggests (rather than mandates) that preference be given to recycled newsprint with a minimum forty percent recycled content. Massachusetts and Pennsylvania have specified goals based on the percentage of recycled newsprint purchases compared to those of virgin newsprint, but do not specify any minimum content standards.

Preliminary Assessment

To conduct a preliminary assessment of the extent to which Northeast publishers are meeting the expectations of NERC states under these agreements and laws, a survey was sent to fifteen newsprint manufacturers in the region. Company officials responsible for the marketing and sale of newsprint were asked to respond to the following question:

> **How do you characterize the demand for recycled newsprint by newspaper publishers from the Northeastern United States?**
>
> | Don't Prefer | Neutral | Prefer | Strongly Prefer | Varies |
> |---|---|---|---|---|

Eight newsprint manufacturers responded to the survey. The responses are tabulated in Table II by the type of product marketed to preserve confidentiality.

TABLE II.
SURVEY RESULTS
- NEWSPRINT MANUFACTURERS -

PRODUCT	RESPONSE	COMMENTS
Recycled and Virgin Newsprint	Prefer	Use of recycled newsprint, along with price and quality, remains an important issue with newspaper publishers.
Recycled Newsprint	Varies	For many publishers the only priority in newsprint purchasing is low price. Virgin newsprint producers have used pricing as a means to mitigate or compete with recycled content. Many of these virgin producers are heavily subsidized foreign entities. In general publishers are much more responsive to price than the "recycling commitment."
Virgin Newsprint*	Neutral	
Virgin Newsprint*	Strongly Prefer	Perhaps "demand" would be a better expression (than prefer).
Virgin Newsprint*	Prefer	As a manufacturer of virgin newsprint and who has invested in de-inking capacity, we find that publishers continue to pressure suppliers, and where possible, favor the purchase of recycled content over virgin.
Virgin Newsprint*	Prefer	
Recycled and Virgin Newsprint	Prefer	Most customers prefer "recycled content" paper but do not properly understand the issues behind their demand.
Virgin Newsprint	Varies	Would prefer recycled if quality and price were equal. Won't pay more for recycled; still not enough available.

Source: NERC survey
* Virgin newsprint manufacturers planning to install deinking facilities by 1994.

Based on the responses from newsprint manufacturers, it appears that Northeast publishers are exercising a preference for newsprint containing recycled fiber. Five of eight manufacturers characterized the demand of the region's publishers for recycled newsprint as "prefer" or "strongly prefer", two felt it "varies", one characterized it as "neutral", and no respondents answered "don't prefer."

The comments submitted by the manufacturers also reveal that price and quality are still a primary concern in the purchasing decision of Northeast publishers. Half of those providing comments stated that the price of newsprint is a factor that rivals recycled content as a determinant in the purchasing practices of publishers.

Long-Term Assessment

Methodology

The publishers' recycled newsprint purchasing goals are tied to the availability of recycled newsprint, and most are measured in terms of recycled fiber purchases as a percentage of total fiber purchases. Deinking capacity is a measure of the ability to produce recycled fibers and production capacity represents the ability to produce finished newsprint (i.e. to produce total newsprint fibers). Therefore, to assess the availability of recycled newsprint using this type of measuring protocol, deinking capacity as a percentage of production capacity needs to be examined.

Region of Study

Given this approach, the next question becomes what is a reasonable region in which to measure the availability of recycled content newsprint? Theoretically, publishers could purchase their newsprint from manufacturers in North America and beyond. Realistically, the purchasing region is limited by the economics of transportation.

For purposes of this analysis, mills located in the region previously defined as Eastern North America are examined. It is assumed that at least some publishers in the Northeast could purchase newsprint from mills located in this region. For instance, while it is unlikely that publishers in the Northern New England area would purchase newsprint from mills in the Southeast and Midwest regions, some publishers in New York, Pennsylvania and New Jersey could purchase newsprint from publishers in these regions.[4]

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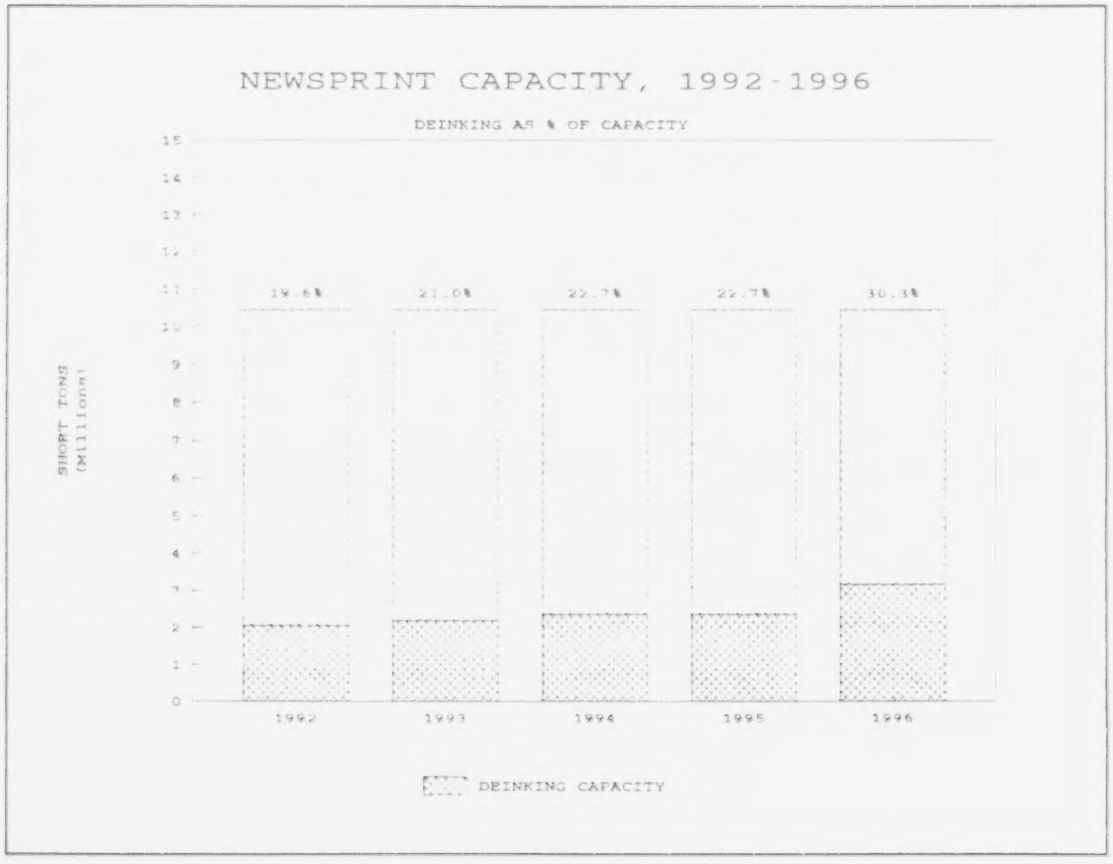
[4]For information on a methodology for conducting state specific assessments of the availability of recycled newsprint to meet the publishers' purchasing goals, please refer to the Appendix.

Regional Assessment

Figure III displays the percentage balance between overall production capacity and deinking capacity when aggregated for the region. These projections assume that both deinking and production capacity are fully utilized, with production capacity remaining constant through the period and deinking capacity rising as all planned and announced projects come on line.

FIGURE III.



Source: NERC
Note: 1992 figures cover facilities now on line. 1993 to 1996 figures cover all facilities scheduled to be operating by January 1 of each year.

Table III compares the six state purchasing goals with the deinking percentages in Figure III. This comparison can be used to make approximate predictions as to the availability of recycled newsprint to meet the publishers' goals.

TABLE III.
COMPARISON OF PURCHASING GOALS AND ESTIMATED AVAILABILITY OF RECYCLED NEWSPRINT
1992 - 1996

	1992		1993		1994		1995		1996	
STATE	GOAL	EST	GOAL	EST	GOAL	EST	GOAL	EST	GOAL	EST
CT	11	20	16	21	20	23	23	23	31	30
ME	-	20	10	21	-	23	16	23	-	30
NH	-	20	11	21	-	23	23	23	-	30
NY	11	20	-	21	-	23	23	23	-	30
RI	11	20	-	21	-	23	22	23	-	30
VT	11	20	-	21	-	23	23	23	-	30

Source: NERC
Note: "EST" refers to the estimated percentage of recycled fiber in total newsprint produced in each of the selected years.

The 1992, 1993, and 1994 estimates exceed the publishers' purchasing goals for all six states. The 23 percent estimates for 1995 match most of the goals for that year. By 1996, 30 percent of the total newsprint fiber available for purchase in the region is projected to be recycled fibers. This figure is slightly less than Connecticut's 1996 goal of 31 percent. Looking ahead, the 1996 percentage is close to the 1997 purchasing goals (31 percent) of the remaining states that measure their goals in terms of recycled fiber purchases.

IV. TRENDS IN THE NORTH AMERICAN NEWSPRINT INDUSTRY[5]

Purpose

The purpose of analyzing trends in the North American newsprint industry is two-fold. First, the examination is designed to enhance NERC members understanding of the newsprint industry, as its well-being has direct implications for the long-term viability of ONP and OMG recycling. Second, the analysis takes a critical look at some of the reasons why Canadian newsprint manufacturers are facing particularly difficult economic times, and the relative contribution of recycled newsprint mandates in the Northeast to these difficulties.

Background

Viewed from a historical perspective, the newsprint industry in North America is best described as Canadian producers selling to U.S. consumers. Canada consumes only 12 percent of the newsprint it produces, exporting most of the remainder (80 percent) to the U.S. The principal markets for Canadian manufacturers are in the Northeast and Midwest regions of the U.S. In fact, over 60 percent of all Canadian newsprint shipments to the U.S. are into these two regions. While Canada continues to supply the majority of newsprint consumed in the U.S., the country's pre-eminent position in the North American market is waning. The evidence of this can be seen by comparing the U.S. and Canadian industries in terms of market share, capacity, production downtime and operating rates.

Changes in Industry

Market Share

Canadian newsprint represented about 53 percent of U.S. consumption in 1990, down from 61 percent in 1980. During this same period, the U.S. newsprint industry's contribution to total domestic consumption increased from 40 percent to 46 percent.

Capacity

Capacity changes over the 1980 to 1990 period show a shift in growth from Canada to the U.S. Capacity in the U.S. grew 40 percent between 1980 and 1990, whereas capacity in Canada rose only 11 percent. While Canada still has the majority of North American newsprint capacity (62 percent in 1990), the country's share has dropped from 67 percent in 1980.

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[5]The information contained in this overview section was taken from the *1992 North American Pulp and Paper Fact Book*, published by Miller Freeman Inc., San Francisco, 1991 and several phone interviews with industry analysts.

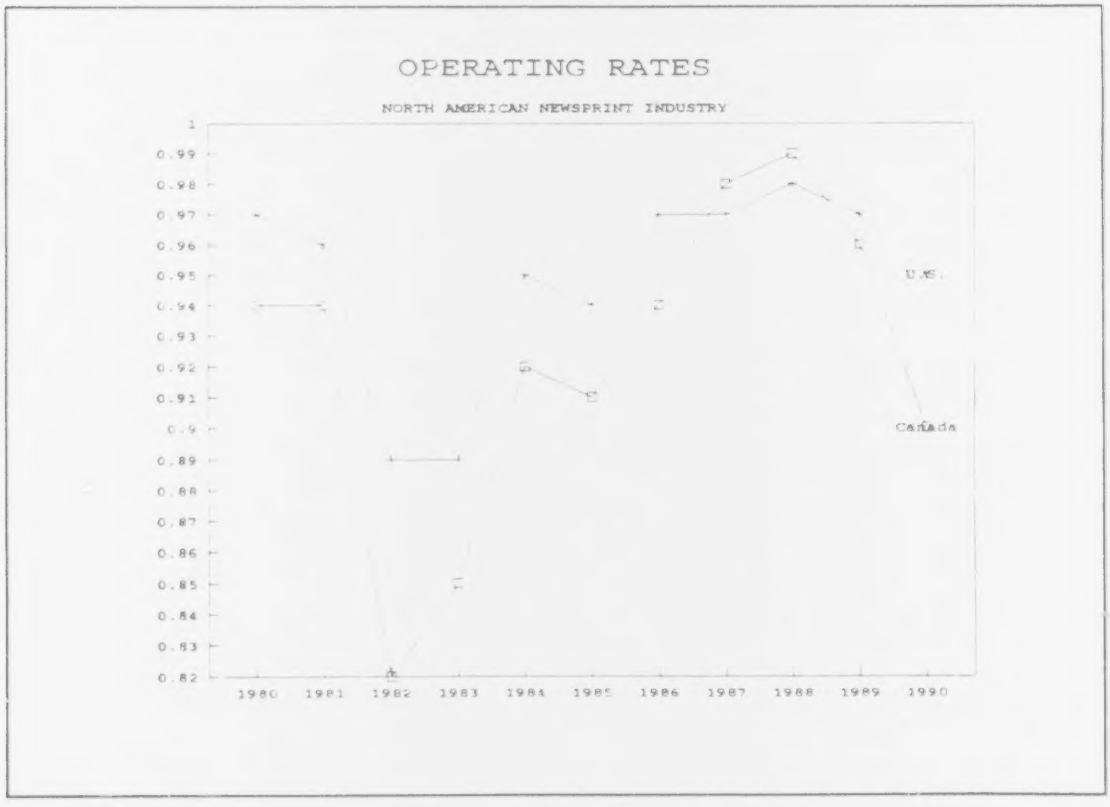
Production Downtime

Production downtime is a temporary or permanent cessation of production affecting either one or more paper-making machines or an entire mill. In the first quarter of 1992, a significant majority of newsprint producers in Canada reported taking downtime at one or more of their mills. No U.S. companies announced downtime during this same period (for mill-specific data on production downtime, see Table II in Appendix).

Operating Rates

Operating rates are a measure of the amount of production capacity utilized. Since capacity is relatively stable from year to year, operating rates will fluctuate according to changes in demand for the finished product. As Figure VI below indicates, the operating rates at Canadian mills have clearly lagged behind those in the U.S. over most of the past decade.

FIGURE IV.



Source: 1992 North American Pulp and Paper Fact Book

FACTORS CONTRIBUTING TO CHANGES IN INDUSTRY

Two primary factors have led to the shift in capacity and market share between the Canadian and U.S. industries, and help explain why production downtime is more prevalent and operating rates are lower at Canadian mills. First, demographic changes in the U.S. have led to a decline in newsprint consumption in the regions most accessible for the Canadian producers (i.e., the Midwest and Northeast). Second, higher manufacturing costs have inhibited the ability of the Canadians to compete with their more efficient U.S. counterparts. Cyclical market forces and the need to adjust to new environmental initiatives are also contributing the restructuring of the North American newsprint industry.

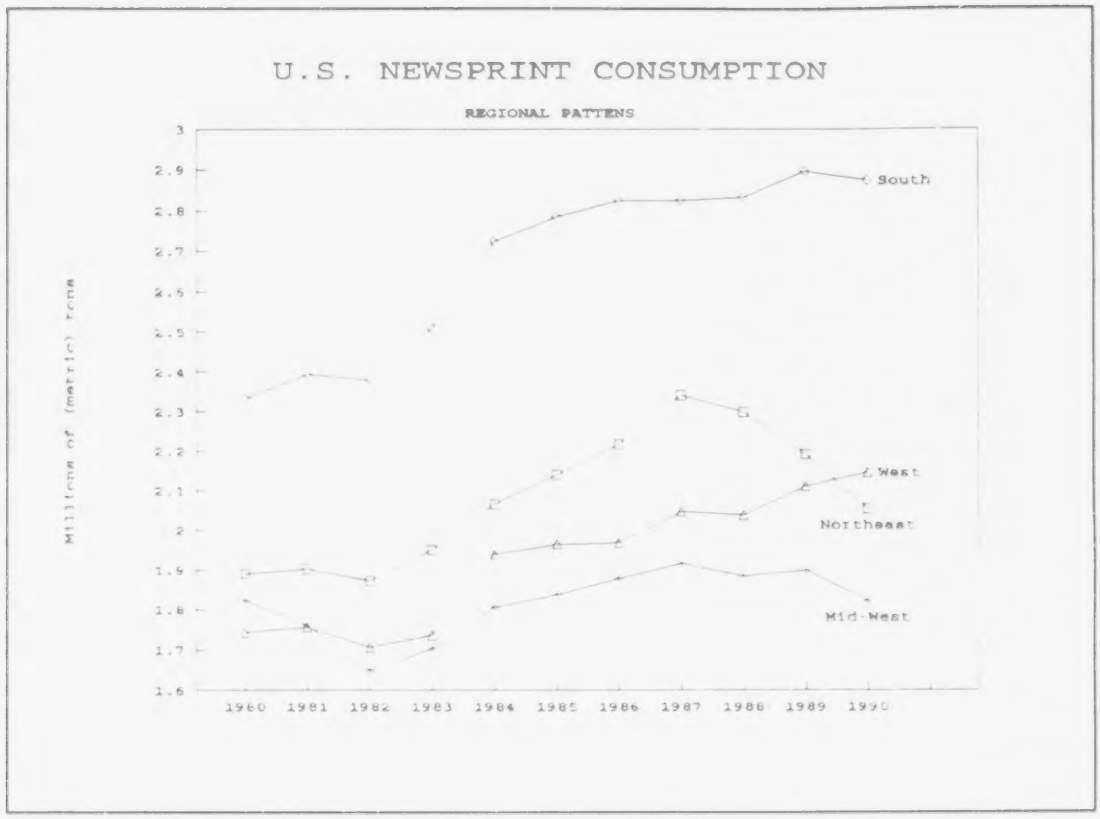
Demographic Changes In The U.S.

Since newsprint consumption in the U.S. tends to mirror population trends, one need only look at population growth statistics in the U.S. to understand the reasons for these shifting consumption patterns. For example, the U.S. population grew by a little over 22 million people from 1980 to 1990, with 88 percent of that growth in the South and West regions. Likewise, newsprint consumption in the U.S. grew by 1.1 million tons during the same period, and 86 percent of that growth came from those same regions of the country.

As Figure IV indicates, much of these population shifts, and associated changes in the geographic distribution in newsprint consumption came, at the expense of the Northeast and Midwest regions of the U.S., two areas that are particularly important to the Canadian newsprint industry. While the U.S. as a whole receives 53 percent of its newsprint from Canada, these two regions import over 80 percent of their newsprint from their neighbor to the north. Similarly, as pointed out earlier, over 60 percent of Canadian newsprint shipments to the U.S. go to these regions. Yet, the population of the Northeast grew by only 3.4 percent over the 1980 to 1990 period, and growth in the Midwest was a modest 2 percent.

Figure IV shows that newsprint consumption grew in each of the four regions through most of the 1980's However, the growth in the South and West was more consistently upward, whereas demand in the Northeast dropped significantly after 1987, and has yet to recover.

FIGURE V.

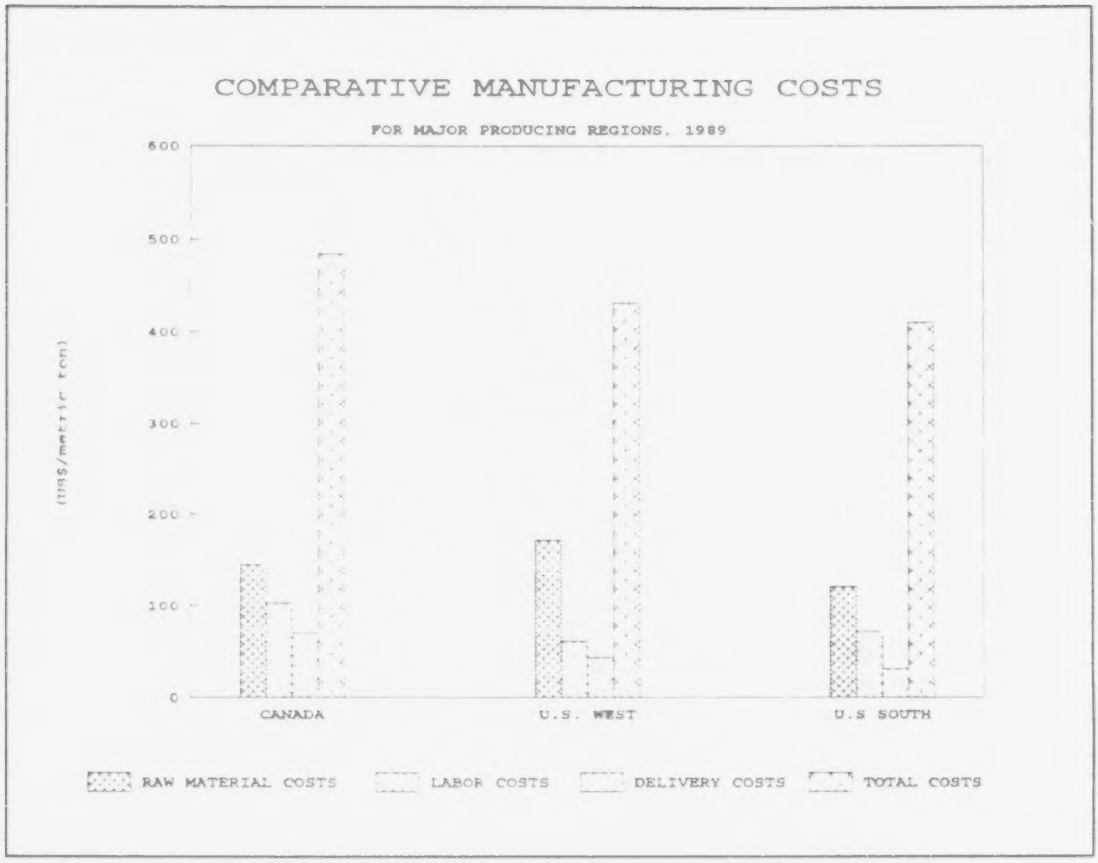


Source: 1992 North American Pulp and Paper Fact Book

Higher Manufacturing Costs in Canada

A 1980's "Newsprint Cost Study" conducted by the Forest Sector Advisory Council of Canada, shows that the average total delivered cost of Canadian newsprint is 11 percent higher than similar costs at mills in the Western U.S., and 15 percent more the mills in the Southern U.S. (Figure V). These elevated expenses are primarily a function of outdated production equipment, lower labor productivity and higher raw material and delivery costs.

FIGURE VI.



Source: Forest Sector Advisory Council of Canada, "Newsprint Cost Study" for 1985-89.
Note: Energy costs, corporate/selling costs and "other" costs are not included in the graph but are included in the total cost figures.

Outdated Equipment and Economies of Scale

The U.S. benefits from larger and more efficient production facilities. In 1991, by one estimate, 134 machines in North American were dedicated primarily to producing newsprint. Of these, 45 were in the U.S., with an average capacity of 160,000 tons per year (tpy). The other 89 were in Canada with an average capacity of 113,000 tpy. Canadian newsprint machines are generally older that those in the U.S. Some date back to the 1920's and 1930's, and most are at least three decades old. Despite speedups and rebuilds, these relatively inefficient machines often cannot compete with modern twin-wire paper machines.

Labor Costs

Relative to U.S. producers in the South and West regions, labor costs are significantly higher in Canada. The principal reason for the labor cost disparities relates to the comparative inefficiencies of Canadian production facilities. The Forest Sector Advisory Council found that labor costs in Canada are 69 percent higher than those in the U.S. West, and 43 percent higher than those in the U.S. South (Figure VI). In 1989, for instance, it took Canada 4.6 manhours to produce a ton of newsprint, while it took the U.S. West 2.2 and the U.S. South 3.0.

Delivery Costs

The delivery costs of Canadian producers is on average about twice that of U.S. producers (Figure VI). To maintain their market share in the U.S., Canadians must now ship increasing amounts of newsprint longer distances in order to access regions of the U.S. market where growth in newsprint consumption is the greatest (i.e., the South and West). The proximity of U.S. producers to the growth markets provides them an additional competitive advantage.

Raw Material Costs

The one component of newsprint manufacturing costs where Canadian mills have an advantage over producers in the U.S. West is in the cost of their raw material. However, relative to their competitors in the U.S. South, the Canadians are at a disadvantage, and the advantage they do have over producers in the U.S. West is diminishing as the market for recycled newsprint grows.

Differences in furnish (raw) material costs are a function of pulping technology, geography, tree species, and the availability of wastepaper as a raw material. Historically, the most widely employed pulping technology in the newsprint industry has been the groundwood process - a process that is most compatible with softwoods used by Canadian producers, and least compatible with the hardwoods harvested by producers in the U.S. South. More recently, advancements in thermal mechanical pulping (TMP) have been made that are relatively more suitable for use with Southern hardwoods than with Northern softwoods. Moreover, TMP requires less labor and energy per ton of output, and produces more usable fibers, making it a more economical process than groundwood pulping. As capacity has grown in the U.S. South to meet the increasing demand for finished newsprint in the region, an increasing amount of TMP has been installed to take advantage of its suitability to the species of hardwood trees that grow in the area. In Canada, particularly in the Eastern Canadian Provinces, stone groundwood pulping remains the predominant technology. Although mills in Canada are changing to the TMP process, the benefits to be gained are not as significant when applied to Northern softwoods.

In the U.S. West, producers have moved quickly into recycled fiber furnishes both for cost reasons and because of government pressure to increase recycling. The relatively abundant supplies of ONP available to producers in the West are decreasing the region's raw material cost structure in relation to their Canadian counterparts.

The trend towards recycled content newsprint, and the availability of wastepaper as a raw material, will continue to play an important role in the economics of newsprint manufacturing, with producers situated close to the so-called urban forests better positioned than those close to the traditional forests.

Other Factors Contributing To Canadian Decline

While much of the Canadian industry is suffering from the effects of relatively high production costs and long-term changes in the consumption patterns of its nearest U.S. customers, a number of other factors have further strained the industry. These include recessionary impacts, the need to invest in recycling capabilities and other environmental directives, troubled relations between management and labor, and unfavorable foreign exchange rates.

Recessionary Impacts

Nationally, the recession has had a notable impact on consumption of newsprint. As the economy began to slow in the late 1980's, advertising was the first expenditure cut by many retailers. And in the newspaper publishing business, every page of advertising that is cut tends to eliminate a page of news as well.

A similar downturn has occurred in classified advertising. Classified (primarily help-wanted, real estate, and auto sales) ads account for the majority of advertising revenues for some daily newspapers. When economic conditions undermine the sources of classified advertisements, newspapers have to make significant cuts elsewhere in their operations, which may mean fewer pages and less coverage.

Regionally, the last two economic downturns in 1982 and 1990 hit the Mid- est and Northeast harder than the rest of the country. Consequently, newsprint consumption has declined more in those regions than in the remainder of the U.S. This has cut deeply into the earnings of the producers in the Eastern Canadian Provinces at a time when they were already reeling from long-term productivity problems.

Other Environmental Directives

Adjusting to new environmental directives has also added costs to the Canadian newsprint industry. Many Canadian mills have either recently installed or are in the process of installing effluent treatment and control systems to meet increasingly stringent environmental regulations in Canada that U.S. mills have been required to meet for

several years. As a result, Canadian producers are incurring environmental compliance costs at a time when the industry is suffering from weak demand and diminished earnings.

Need For Investments in Recycling Capabilities

For the Canadians, investing in recycling capacities has been particularly painful given the structural problems facing the industry. The Canadian newsprint industry of the past was entirely virgin based. Mills were constructed close to natural forests to insure that raw material costs were kept low. The "million dollar question" now facing Canadian newsprint producers is whether recycled content requirements will increase their raw material costs relative to producers in the U.S. To sell their product in a U.S. market that is demanding recycled content newsprint, Canadian producers will have to procure much of their recovered fibers from the distant urban forest of the U.S.

Poor Labor Relations

Labor relations are another problem for the Canadian industry. Province-wide strikes in British Columbia and sporadic work stoppages in Eastern Canada have made U.S. publishers wary of Canadian producers' long-term reliability.

Unfavorable Foreign Exchange Rate

The foreign exchange rate for Canadian currency is also important in determining the competitiveness and profitability of the country's newsprint industry. For example, a 3 percent to 4 percent rise in the Canadian-U.S. dollar exchange rate in 1988 caused Canadian mills to lose nearly 40 percent of a $40/metric ton price increase implemented at the beginning of that year.

Industry Outlook

As demand for newsprint slowed in mid-1988 and continued to decline through 1991, about 2.75 million tons of new North American newsprint capacity began coming on line, with 12 new machines starting-up during 1989-91. Adjusted by announced or likely shutdowns, this translates into an increase in the 1989-92 period of 1.76 million tons of capacity, at a time when North American demand is projected to drop by 590,000 tons (from 14.875 in 1980 to 14.285 in 1992). Since net North American newsprint exports are projected to grow by only 330,000 tons in that period, it seem unlikely 1992 will see a major market upturn.

Canada's share loss in its biggest market, the U.S., is expected to worsen in the early 1990s as the U.S. industry's capacity continues to grow. In order to stay competitive, the Canadians will have to upgrade existing production plant capacity, and deinking capacity will be a necessary component of such upgrades.

- APPENDICES -

TABLE I

CURRENT AND PROJECTED ONP & OMG DEMAND FROM RECYCLED NEWSPRINT MANUFACTURERS

EASTERN NORTH AMERICA

short tons (000's)

COMPANY NAME	LOCATION	*WASTEPAPER FURNISH* ONP	OMG	1992 *ESTIMATED DEMAND* ONP	OMG	1994 *ESTIMATED DEMAND* ONP	OMG	1996 *ESTIMATED DEMAND* ONP	OMG
EASTERN U.S.									
Augusta Newsprint	Augusta, GA	70%	30%	61	35	81	35	81	35
Bear Island	Ashland, VA	70%	30%	0	0	40	17	40	17
Bowater Inc.	Calhoun, TN	70%	30%	89	38	89	38	218	93
	E. Millinocket, ME	70%	30%	0	0	84	36	84	36
FSC Paper	Alsip, IL	70%	30%	112	48	112	48	112	48
Garden State	Garfield, NJ	100%	0%	260	0	260	0	260	0
Kruger	Manistique, MI	70%	30%	105	45	105	45	105	45
Ponderosa Fibres	Albany, NY	70%	30%	0	0	0	0	129	52
	Bronx, NY	70%	30%	0	0	0	0	120	51
Southeast Paper	Dublin, GA	70%	30%	398	171	398	171	398	171
EASTERN CANADA									
Atlantic Packaging	Whitby, Ont	70%	30%	125	54	125	54	125	54
Canadian Pacific	Gatineau, Que	70%	30%	162	69	162	69	162	69
	Thunder Bay, Ont	70%	30%	89	38	89	38	89	38
Stone-Consolidated	Shawinigan Falls, Que	70%	30%	0	0	65	28	65	28
Daishowa Forest Pro. *	Quebec City, Que	50%	10%	73	15	73	15	73	15
Donahue Inc.	Cap de la Madelaine	70%	30%	0	0	84	36	84	36
Kruger Inc.	Bromptonville, Que	70%	30%	46	20	46	20	46	20
Quebec & Ontario Paper	Thorold, Ont	70%	30%	194	83	194	83	194	83
	Baie Comeau, Que	70%	30%	0	0	0	0	294	126
Spruce Falls	Kapuskasing, Ont	70%	30%	38	16	38	16	38	16
	TOTALS			1,772	631	2,045	748	2,717	1,033

* 40% of mill's wastepaper furnish will be old telephone directories.

SOURCE: Compiled by the Northeast Recycling Council from a variety of published sources.

METHODOLOGY FOR CONDUCTING STATE SPECIFIC ASSESSMENT OF ABILITY OF PUBLISHERS TO MEET PURCHASING GOALS

Note: The following applies only to states that measure their purchasing goals in terms of recycled fiber purchases.

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Since the region used in the report encompasses a geographic area that is likely to be beyond the traditional purchasing territory of publishers in some Northeast states, states wishing to conduct specific assessments of the availability of recycled newsprint to meet their purchasing goals may define the region of study more narrowly.

Table II provides mill by mill data on current and projected production and deinking capacity for all newsprint producers in Eastern North America. The steps in conducting a state specific assessment are as follows:

1) Define a region based on areas that are in geographic proximity to your state and on newsprint purchasing receipts as reported by publishers as per the agreements and laws.

2) Select the mills from Table II that are within this region.

3) Tally the current and projected deinking capacity of these mills for selected years from the "ESTIMATED DEINKING CAPACITY, 1992 - 1996" columns.

4) For each selected year, divide the total current production capacity (from "CURRENT CAPACITY - Production") by the total deinking capacity for mills in the region. Covert the figures to percentages.

i.e.: $\frac{\text{total deinking capacity}}{\text{total production capacity}}$ = percentage of recycled fiber in total newsprint produced

5) Compare these percentages to the publishers' purchasing goals for selected years. This comparison can be used to make approximate predictions as to the availability of newsprint containing recycled fibers to meet the goals.

TABLE II

CURRENT AND PROJECTED NEWSPRINT MANUFACTURING CAPACITY & ASSOCIATED DATA

EASTERN NORTH AMERICA*

short tons (000's)

COMPANY NAME	LOCATION	CURRENT CAPACITY Production	CURRENT CAPACITY Deinking	1992 FIGURES Production Downtime	1992 FIGURES Estimated Production	PLANNED START-UP OF DEINKING CAPACITY	PROPOSED DEINKING CAPACITY	ESTIMATED DEINKING CAPACITY 1992	1993	1994	1995	1996
EASTERN U.S.												
Augusta Newsprint	Augusta, GA	352	96	0	334	—	0	96	96	96	96	96
Bear Island	Ashland, VA	203	0	0	193	End'92	48	0	48	48	48	48
BOWATER INC	Calhoun, TN	728	106	0	692	1995	153	106	106	106	106	259
	Catawba, SC	211	0	0	200	--	0	0	0	0	0	0
	E. Millinocket, ME	295	0	0	280	7/93	100	0	0	100	100	100
FSC Paper	Alsip, IL	133	133	0	126	—	0	133	133	133	133	133
Garden State	Garfield, NJ	209	217	0	199	--	0	217	217	217	217	217
Kruger	Manistique, MI	88	125	0	84	--	0	125	125	125	125	125
PONDEROSA FIBRES	Albany, NY	0	0	0	0	1995	154	0	0	0	0	154
	Bronx, NY	0	0	0	0	1995	143	0	0	0	0	143
Southeast Paper	Dublin, GA	406	474	0	386	--	0	474	474	474	474	474
EASTERN CANADA												
ABITIBI-PRICE	Alma, Que	127	0	(15)	91	--	0	0	0	0	0	0
	Beaupre, Que	10	0	(10)	0	--	0	0	0	0	0	0
	Chandler, Que	234	0	(10)	181	--	0	0	0	0	0	0
	Fort William, Ont	139	0	(10)	104	--	0	0	0	0	0	0
	Grand Falls, Nfld	177	0	(10)	135	--	0	0	0	0	0	0
	Iroquois Falls, Ont	252	0	(10)	196	—	0	0	0	0	0	0
	Kenogami, Que	33	0	(10)	19	—	0	0	0	0	0	0
	Stephenville, Nfld	169	0	(10)	129	--	0	0	0	0	0	0
	Thunder Bay, Ont	182	0	(182)	0	—	0	0	0	0	0	0
Atlantic Packaging	Whitby, Ont	85	149	0	69	--	0	149	149	149	149	149
Boise Cascade Canada	Kenora, Ont	268	0	(28)	194	—	0	0	0	0	0	0
Bowater Mersey Paper	Liverpool, NS	218	0	(15)	164	—	0	0	0	0	0	0
CANADIAN PACIFIC	Dalhousie, NB	313	0	(141)	139	—	0	0	0	0	0	0
	Gatineau, Que	481	193	(18)	375	—	0	193	193	193	193	193
	Thunder Bay, Ont	387	106	0	313	—	0	106	106	106	106	106
	Trois-Rivieres, Que	301	0	(181)	97	—	0	0	0	0	0	0
Daishowa Forest Pro	Quebec City, Que	429	121	(24)	328	—	0	121	121	121	121	121
DOMTAR NEWSPRINT	Dolbeau, Que	150	0	(13)	111	--	0	0	0	0	0	0
	Donnacona, Que	35	0	(13)	18	—	0	0	0	0	0	0
	Red Rock, Ont	73	0	(46)	22	—	0	0	0	0	0	0
DONAHUE INC.	Amos, Que	172	0	0	139	—	0	0	0	0	0	0
	Clermont, Que	330	0	(44)	232	--	0	0	0	0	0	0
	Cap de la Madelaine	0	0	0	0	End'92	100	0	100	100	100	100
F.F. Soucy, Inc	Riviere de Loup, Que	160	0	0	130	—	0	0	0	0	0	0
James Macleren Inc	Buckingham, Que	191	0	0	155	--	0	0	0	0	0	0
XRUGER INC	Bromptonville, Que	215	55	(13)	164	—	0	55	55	55	55	55
	Corner Brook P&P	322	0	(8)	254	--	0	0	0	0	0	0
	Trois-Rivieres, Que	296	0	(58)	193	--	0	0	0	0	0	0

TABLE II

CURRENT AND PROJECTED NEWSPRINT MANUFACTURING CAPACITY & ASSOCIATED DATA

EASTERN NORTH AMERICA*

short tons (000's)

COMPANY NAME	LOCATION	CURRENT CAPACITY Production	CURRENT CAPACITY Deinking	1992 FIGURES Production Downtime	1992 FIGURES Estimated Production	PLANNED START-UP OF DEINKING CAPACITY	PROPOSED DEINKING CAPACITY	ESTIMATED DEINKING CAPACITY 1992	1993	1994	1995	1996
QUEBEC & ONTARIO	Baie Comeau, Que	458	0	0	371	1995	350	0	0	0	0	350
	Thorold, Ont	313	231	0	254	--	0	231	231	231	231	231
Spruce Falls	Kapuskasing, Ont	314	45	(71)	197	--	0	45	45	45	45	45
STONE-CONSOLIDATED	Grand Mère, Que	16	0	0	13	--	0	0	0	0	0	0
	La Baie, Que	378	0	0	306	--	0	0	0	0	0	0
	Shawinigan Falls, Que	330	0	(73)	208	1993	77	0	0	77	77	77
	Trois-Rivieres, Que	110	0	0	89	--	0	0	0	0	0	0
Stora Forest Ind.	Point Tupper, NS	174	0	(8)	134	--	0	0	0	0	0	0
	TOTALS	10,467	2,051	(1,021)	8,019		1,125	2,051	2,199	2,376	2,376	3,176

SOURCE: Compiled by the Northeast Recycling Council from a variety of published sources.

* For definitions of Table II headings and sub-headings, see following page.

DEFINITION OF TABLE II HEADINGS & SUB-HEADINGS

Production Capacity - The amount of paper that can be made when a mill operates production facilities at full capacity.

Deinking Capacity - The amount of recovered fiber that can be converted to production ready pulp when a deinking line operates at full capacity. A deinking facility removes contaminants (e.g., inks and glues) from recovered fiber. It does not add production capacity, but enables the mill to use recycled fiber in its production process.

> Note: Published capacity numbers given in tons/day were converted to tons/year using the following formula:
>
> tons/day capacity x 350 production days = annual capacity (tons/year)

Production Downtime - A temporary or permanent cessation of production affecting either one or more paper making machines or an entire mill.

> Note: Figures cover announced downtime through June 1992. The downtime figure also includes newsprint mill and/or machine closures that were announced during the first quarter of 1992. These closures will last at least through the end of 1992. Parentheses around a number represents a negative value.

Estimated Production - A proxy for true production levels calculated using the following formula:

> (production capacity - production downtime) x
> average operating rate = estimated production
>
> Note: Operating rate is a measure of production capacity utilization. The average operating rate in Canada for the first quarter of 1992 was .81 (81% of capacity). This figure was used to calculate estimated production for Canadian mills. The operating rate in the U.S. for the same period was .95 (95% of capacity). This figure was used to calculate estimated production for U.S. mills (*Pulp and Paper Week*, May 25, 1992).

PLANNED START-UP OF DEINKING CAPACITY - The publicly announced date or year in which the deinking facility is scheduled to begin operating.

PROPOSED DEINKING CAPACITY - The publicly announced deinking capacity of the facility.

ESTIMATED DEINKING CAPACITY (1992 - 1996) - Represents projected deinking capacity scheduled to be on line by January 1 of that year.